



Hanze
University of Applied Sciences
Groningen

SPIRIT

A Shared Process in Regional Innovation and Transition

Repositioning the Hanze UAS in the Regional Quadruple Helix innovation-ecosystem

Part I: Exploring the Context and Policy

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Transition**

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Quadruple Helix innovation-ecosystem**

Part I: Exploring the Context and Policy



This research is executed as part of the European collaborative project TraCS3, which is partly made possible by Interreg Europe.

Central to TraCS3 is the question of how we can improve the regional innovation infrastructure. This is needed for SMEs to be able to take part of the regional innovation-value chains and to increase their own innovation capacities - especially as it pertains to first movers. Knowledge institutions play a vital role in this.

Which is why the TraCS3-partners are developing best practises to make innovations more accessible and to develop them further together.

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Inhoud

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Reading Guide

SPIRIT is a two-part discussion piece in which the position of the Hanze University of Applied Sciences, with its education and research, is placed in the framework of the regional infrastructure for cooperation and innovation.

In front of you is part I, which consists of an inventory of the current and upcoming policy, where we zoom in from European to national and from regional to local level. Additionally, we look at a number of quantitative accomplishments of the Hanze University of Applied Sciences. This preparatory research is performed as part of the European collaborative project Interreg Europe TraCS3.

Central to TraCS3 is the question of how you can improve the regional innovation infrastructure. This is needed to allow the regional SMEs to better take part in the regional innovation value chains. The goal is that, in doing so, SMEs can increase their innovation capacities - also and especially when it pertains to first movers. The knowledge institutions play a significant role in this. This is why the TraCS3 partners are developing best practices to make innovations more accessible and to further develop them together.

With this document initially, we want to give the first impulse for further discussion within our University of Applied Sciences. Additionally, it is shared with the European partners in the 4th TraCS3 project meeting in Finland, to exchange our thoughts. Part II will discuss the internal process in detail and will be published end of 2019.

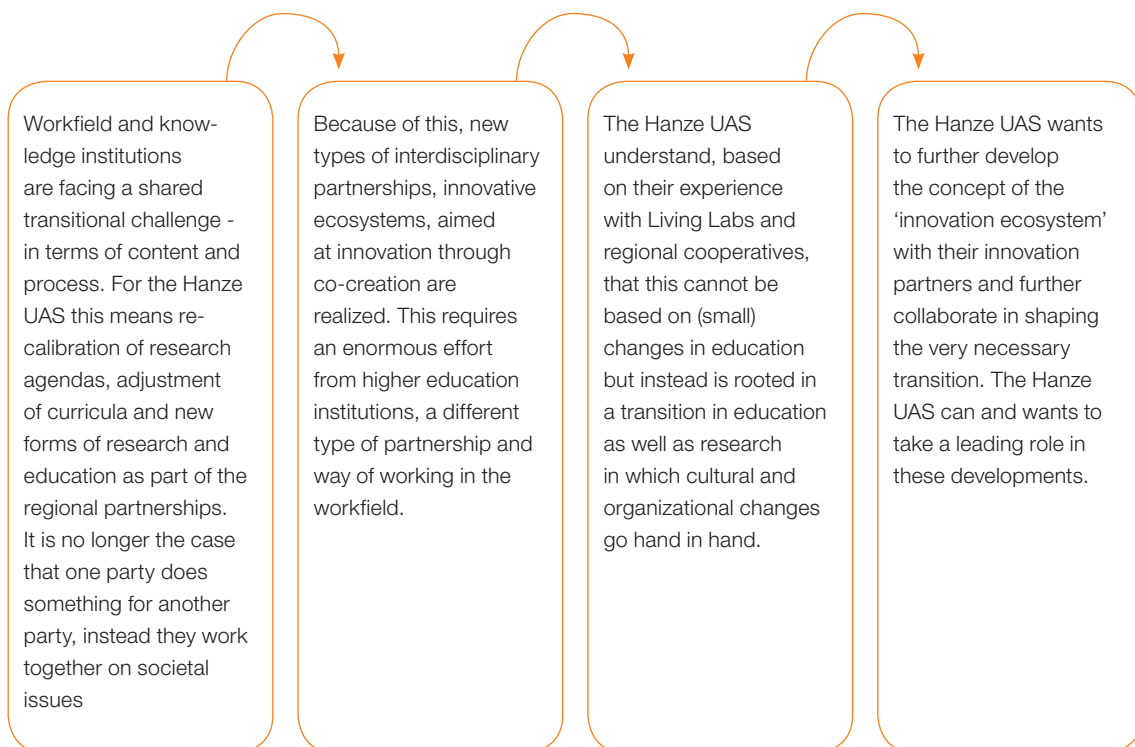
As an introduction, here follows a short overview of the content and structure of this piece.

- We start with a **transition statement** from the Hanze University of Applied Sciences. In this statement the UAS makes its goals for building an innovation ecosystem, founded in the shared transition agenda, known. From its experiences with Living Labs and regional cooperatives, it indicates a desire to develop and co-create the transitional process and to play a leading role in this.
- In **paragraph 2** we indicate the level of urgency and the current momentum. We are amidst a fundamental renewal to which the Hanze UAS can add value with its knowledge centres, studies and unique experiences. Above all, at this very moment, several European programmes for the period starting in 2021 are being decided and also in the Netherlands, on a national and regional level, policy is being shaped.
- The context is described on a European, national, regional and local level in **paragraph 3**.
- **Paragraph 4** specifically addresses the task of education and research. A few key terms related to this are the mission guided innovation policy, the responsiveness of education and research, new insights regarding the interests of knowledge institutions as it pertains to the development and execution of smart regional specialisation strategies as well as the broadening of the collaboration from the triple helix to the quadruple helix.
- **Paragraph 5** goes further into the current quantitative accomplishments of Hanze University of Applied Sciences. For this, we have looked to the professorships surrounding the three priorities for the Hanze UAS, to the Living Labs and the subsidized projects as documented in Pure (the research information system).
- In **paragraph 6** you will find the most important conclusions from the previous paragraphs. Additionally, we state the most important recommendations that have been made in the margins of the main text.

1. Transition statement

Hanze University of Applied Sciences as an innovation partner in the regional quadruple helix

We start our exploration with a transition statement - a short assertion from the Hanze University of Applied Sciences in which it, in a sense, calibrates its compass and sets its course for its education and research. Starting from the shared transition task we, as Hanze UAS, make our intentions known as it pertains to the building of innovation ecosystems. Based on our experiences with Living Labs and regional cooperatives we indicate that we want to continue developing and collaboratively shaping the regional transitional process and take a leading role in this task. Hanze UAS now talks about it internally as follows:



2. The Urgency – Why Now?

We are at a point where urgency and momentum have converged and strengthened each other.

→ Momentum

Through research, societal dynamics and translation to policy new insights and methods are arising which together are gaining strength and speed. The focus is shifting from the triple to the quadruple helix, from linear to circular processes, and from R&D to RR&I - three fundamental renewals to which the Hanze UAS can contribute value with its knowledge centres, studies and exceptional experiences from recent years.

From triple to quadruple helix

Triple helix represents the triangle of university, industry and government. The idea is that research and education generate new knowledge, industry applies and valorizes the knowledge and government guides and controls aspects based on its policies. In the model of the 'quadruple helix' - a fourth party is added. But who is that? Opinions on this differ. Some say: 'the citizen'. In this piece we see the fourth party as being the societal middle field, meaning all the organizations that are aimed at a certain societal need. Citizens are a part of this too. However, not as individuals, but in an organized form such as an association, foundation, etc. so that they can act as equal discussion and negotiating partners. We will come back to this in paragraph 4.

RR&I: Responsible Research & Innovation

RR&I stands for Responsible Research & Innovation. RR&I means that actors that are involved in the research process have to work together to ensure that both the innovation process and outcomes align better with the needs of society. It is one of the cross-cutting priorities of Horizon 2020. Societal players need to be better involved so that they can more easily gain access to scientific results. Additionally, research outcomes need to be better embedded in formal and informal education. Lastly, ethical and gender issues need to translate to the research concept and processes.¹

→ Urgency

We are facing a multitude of large scale and large related societal issues: climate change, pollution, energy transition, digitalization, ageing population, deforestation, health, healthcare and quality of life. These issues are inextricably connected and this challenges us to connect with each other surrounding these issues. As a global, overarching agenda, the United Nations have set up the Sustainable Development Goals (SDGs) to address these issues. When broken down we can find the way this translates to a European, national, regional and local level.

¹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>, consulted on 22-07-2019.

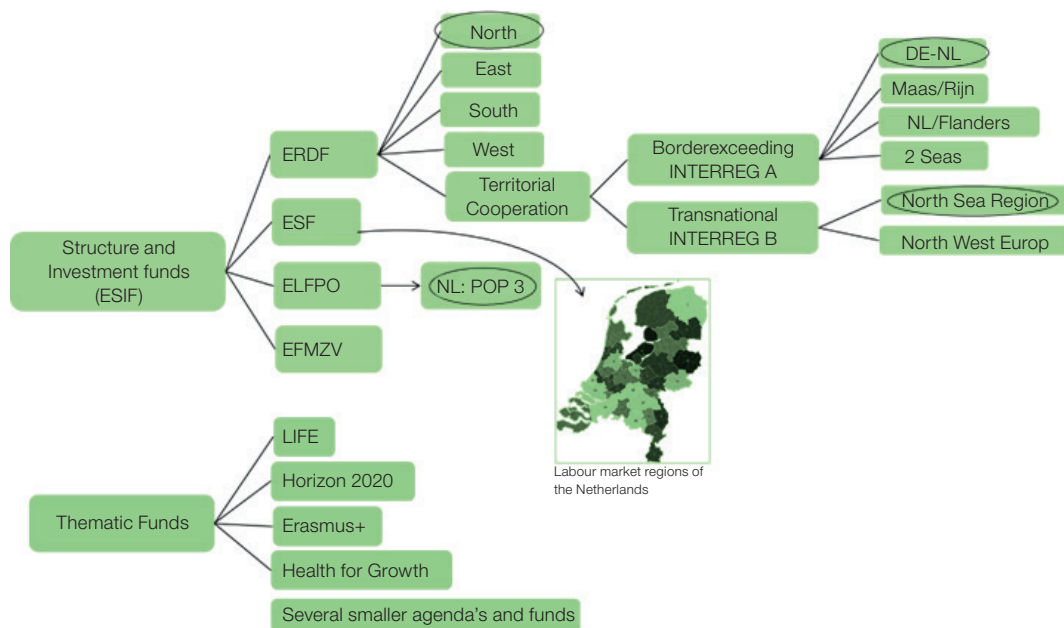
3. The Context – Policy and Programmes 2021 & beyond

3.1 Brussels: New Programmes & Mission Guided Policy

Little is definitively known about the total content and budgetary division of the new European programmes in the period of 2021. We will highlight the decisions that have been made up until now.

To start, here is an overview of the division of the EU-programmes:

- **Structural and investment funds:** funds with which the regional policy in the different member states is supported with the eventual goal to reduce the differences in developmental and wealth levels between the European regions. The means for doing this are managed by the member states themselves, except for the budgets in EFRO-INTERREG, which are managed from secretariats and steering groups per collaborative region.
- **Thematic funds:** these subsidy programmes are managed by the European Commission itself. Per fund, there is a leading topic, varying from research and innovation, education and sports to health, mobility, culture, legal justice and other topics.



The coming year will be crucial for the drafting of the financing programmes starting in 2021. All budgets named in this paragraphs are therefore not yet definitively decided upon, however they are largely decided by the negotiating partners in the European member states.

Missions

An important change in relation to the currently running round and the accompanying main points of policy and programmes is the introduction of missions. The missions are supposed to ensure multidisciplinary solutions for large scale societal issues and have a measurable goal. The discussion surrounding this is still in full swing in both the European Parliament as in the Council. As to the nature and content of these missions, this will be discussed later in paragraph 4.

Another aspect in all the proposals for the upcoming EU programmes is the ambition to make part of the budget explicitly destined for the realisation of climate goals. This can take many shapes however, at its core, comes down to the reduction of CO₂ emissions.

3.1.1 Horizon Europe²

Horizon Europe builds on the success of Horizon 2020. However, through five new ambitions, some important new aspects are being highlighted:

- **Ambition 1: Supporting groundbreaking innovations, through: the establishment of European Innovation Council EIC.** Supporting market advancing innovation and taking the most promising ideas and guiding them from the laboratory to real life application. Secondly, supporting the most innovative starting enterprises and businesses with scaling up their ideas. The EIC will provide direct support to innovators, primarily through two financing instruments: one for those in an early stage and one for the development and marketing phase.
- **Ambition 2: Creating impact by being mission-oriented and involved with citizens, through: missions for research and innovation in the entire EU.** Formulating ambitious goals to tackle questions and issues that are relevant to our daily life. Citizens, stakeholders, the European Parliament and the member states have contributed to the development of these missions:
 - Adapting to climate change;
 - Climate-neutral and 'smart' cities;
 - Healthy foodstuffs and soil fertility;
 - Fighting cancer;
 - Healthy oceans.At least 35% of the budget needs to be used for climate-related research.
- **Ambition 3: Increasing transparency, through: open scientific policy.** This will become the modus operandi of Horizon Europe. It will go beyond the open access policy of Horizon 2020 and require open access to publications and data and management plans surrounding research data.
- **Ambition 4: Rationalizing the financing landscape, through: new approaches to partnerships.** Horizon Europe will streamline the number of partnerships with industry, societal middle field and financing funds, which are co-programmed and co-financed by the EU.
- **Ambition 5: Reducing the administrative burden, through: simplifying rules.** This will increase legal security and reduce the administrative burden for the beneficiaries and programme managers.

2 The information about Horizon EUROPE is taken from https://ec.europa.eu/commission/sites/beta-political/files/budget-may2018-research-innovation_nl.pdf, consulted on 18-07-2019. Subsequently, information was taken from newsletters of the association Neth-ER (Netherlands house for Education and Research), the ScienceGuide and the knowledge centre 'Europa Decentraal'.

Three Pillars



- Pillar I Open Science - €25,8 billion
 - Supports groundbreaking research projects that are defined by researchers themselves and directed by way of the European Research Council (€16,6 billion),
 - Finances grants for and exchanges of researchers by way of the Marie Skłodowska-Curie actions (€6,8 billion),
 - Invests in world-class research infrastructures.
- Pillar II Worldwide challenges and industrial competitive ability - €52,7 billion
 - Offers direct support to research regarding societal challenges,
 - Strengthens technological and industrial capabilities,
 - Encompasses missions that impact the entire EU, with ambitious goals with which a number of our largest problems are addressed.
 - Alongside that also financing the activities of the Joint Research Centre (€2,2 billion) which aids the European and national policymakers with independent scientific data and technical support.
- Pillar III Open Innovation - €13,5 billion
 - Will, by way of the European Innovation Council (€10 billion), make Europe into a front runner in the realm of market driving innovation.
 - Will contribute to the complete European innovation landscape by, among other things, strengthening the European Institute of Innovation and Technology in order to integrate businesses, research, higher education and improving of entrepreneurship (€3 billion).

State of affairs (July 2019)

In order to execute Horizon Europe, €94,1 billion has been proposed. An intermediate agreement was reached over this in April 2019 by the European Parliament and the European Council. The eventual budget is not part of this agreement. It is decided during negotiations about the Multiannual Financial Framework. Decisions have yet to be made about synergies with other EU-programmes through which the regional innovation capacity can be strengthened further.

The European Commission has also started the preparations for the execution. The first step is finalizing the strategic plan: the formulating of the working programmes and the 'calls for proposals'. In order to set up a strategic plan, a co-design process will be started. The member states, the Parliament and other stakeholders up until the European citizens are included in this process. This should increase support for European investments in research and innovation. The discoveries from the co-design process will form the foundation when shaping the European investments in research and innovation. As a part of this process, the Commission has started an online inquiry.

3.1.2 European Structural and Investment Funds (ESIF)³

These funds support the European cohesion policy and are subdivided into five separate programmes:

- European Regional Development Fund (ERDF)
- European Social Fund (ESF)
- European Agricultural Fund for Rural Development (EAFRD)
- European Maritime and Fishery Fund (EMFF)
- Cohesion Fund (CF)

In 2018, the European Commission proposed that the cohesion policy will be oriented towards a 'Smarter Europe' from 2021 onwards. A total of €373 billion has been reserved for a programme with the following priorities:

- Innovation
- Digital Technologies
- Carbon Dioxide Free Economies
- Europe closer to the Citizen

There is a need for more attention for synergy with Horizon Europe and investments in Human Capital. Interreg Europe is not to be continued. In order to replace this, it is proposed to take the aspect of 'interregional cooperation' and guide it through into a new instrument: Interregional Innovation Investments. This is an investment programme for the marketing and scaling up of interregional innovation projects aimed at the development of European value chains. The investments will fall directly under the European Commission.

3 Sources: <https://europadecentraal.nl/onderwerp/regionaal-beleid-en-structuurfondsen/structuur-en-investeringsfondsen/>; <https://www.neth-er.eu/nl/nieuws/Ook-het-Parlement-wil-een-slimmer-en-duurzamer-cohesiebeleid>; consulted on 31-05-2019

The European Parliament has since also expressed themselves in regard to the design of the ESIF. It is desired that the cohesion policy will be designed to be more innovative and sustainable. With this, the standpoint of the Parliament is well suited to the proposal by the Commission. Some things, do however need to be altered. Parliament has an especially different view from the Commission on spending the EFRO funds. Where the Commission proposes that the regions spend 35-60% on a 'Smart Europe', Parliament specifies this down to 30-50% of spending. For sustainable urban development, Parliament wants to spend more - 10%, as opposed to 6%, proposed to the Commission. Another 30% of the total spending needs to be directed to climate goals, upon this Parliament and the Commission do agree.

Parliament also wants to determine the ERDF budget per region. The Commission suggests continuing doing this on a national level. The Parliament suggests that, when considering the prosperity of the different European regions, the budget can be used for those regions who will profit from it most.

As soon as the European Council and the Council of Ministers has chosen a position, all the parties can come together in the coming autumn to negotiate the proposal.

3.1.3 More practical experience in education

The European Commission is working on a guideline for the curriculum of European educational institutions⁴. They want to develop a standard for the mastery of Key Enabling Technologies (KETs) and Advanced Manufacturing Technologies (AMT). At the start of March, an interim report was published with a proposal for a European guideline that ought to be finalized by the start of 2020. Therein the commission states that educational systems need to offer more opportunities for practical experience by working more closely with the business community. By doing this, students will be better prepared for the requirements of the 21st century. The business community and education need to find and maintain structural collaboration in order to create these practical experiences during a study, curricula need to be adapted. This can only take place when you also invest in the professional development of educators. This holds true for both vocational as well as higher education and possibilities for further education on the work floor⁵. Also see the paragraph about life long learning.

3.1.4 ERASMUS+

In May of 2019, the European Commission reached an agreement about the next Erasmus programme. The programme is subdivided in three core activities: learning mobility, the collaboration between organizations and institutions and supporting policy development and collaboration.

4 <https://www.neth-er.eu/nl/nieuws/EC-meer-praktijkervaring-het-onderwijs-ten-behoeve-van-KET-s-en-AMT>; consulted on 22-07-2019

5 Executive Agency for Small and Medium-sized Enterprises (European Commission); 2019. Curriculum guidelines for Key Enabling Technologies (KETs) and Advanced Manufacturing Technologies (AMT), consulted <https://publications.europa.eu/en/publication-detail/-/publication/4dcaeee3-29c2-11e9-8d04-01aa75ed71a1/language-en/format-PDF/source-87225354> on 07-03-2019

Changes in relation to the former programme contain but are not limited to:

- Supporting the cooperation between European universities in different member states in order to improve the networks of these universities in terms of quality, performance and appeal.
- Support for the development of 'Centres of Professional Excellence' in terms of institutions that offer vocational education, as a driving force for excellence and innovation.

→ Recommendation 1

Through Erasmus+, higher education institutions will get the strategic opportunity for better collaboration with their partners in the quadruple helix. In light of this, it is peculiar that the Hanze UAS, with its meaningful position in the region, was only lead partner on one ERASMUS-project (Move Healty, E+Sport). The Hanze UAS should make more use of the current and upcoming ERASMUS-programme, and specifically and strategically aim at synergies with other projects and programmes.

3.2 National level - The Hague

3.2.1 To a mission driven innovation policy with impact

The innovation policy of the Ministry of Economic Affairs and Climate is rooted in the large scale societal questions and changes. Under management of the Ministry, several broad coalitions have established 25 missions, subdivided in 4 societal themes, which are also seen potential catalysts for the future business model of the Netherlands.

1. Energy Transition and sustainability - with a focus on reducing the national greenhouse gas emissions with 49% in 2030, leading to 95% in 2050 in relation to 1990. This means CO₂-free buildings, electricity systems, industrial production, mobility, agriculture and nature systems and a generally sustainable and fully circular economy in 2050.
2. Agriculture, water & food - with a special role for circular agriculture, climate-neutral and sustainable food production and climate and water-resistant design of the regional and urban areas.
3. Health and Care - with as a central mission that all Dutch citizens will be living in good health for 5 years longer in 2040. And that the health differences between the lowest and highest social-economic groups decrease by 30%.
4. Safety - aimed at reducing crime, including safety on the ocean, space, digital space and in the armed forces.

These missions serve as the foundation for setting up the public-private knowledge and innovation agendas (KIAs). With this, it's no longer sectors that serve as the starting points for the agenda's, but instead the societal challenges and key technologies. Public-private collaboration is explicitly stimulated, also by the separate financing instruments. These are partially awarded and managed per region⁶, and partially nationally by the Netherlands Enterprise Agency.

⁶ Zie hiervoor de subsidiwijzer van SNN op <https://www.snn.nl/alle-subsidies>

3.2.2 Top sectors require learning communities

In meetings regarding top sectors, the approach of the ‘Learning Communities’ was regarded as being an effective approach to lifelong learning (LLL): “instead of going back to school, we go forward into dynamic and inspiring learning communities in open networks”. The top sectors see the Learning Communities as an effective instrument to connect work, learning and innovation. They support this vision with an investment agenda and a research agenda. It is deemed essential that there is shared ownership by the partaking organization over the concept, design and embedding of the learning process.⁷

→ Recommendation 2

The Hanze UAS has developed a special kind of learning communities with its Living Labs. At the same time, it improves the workspace learning in both the initial and postinitial education. The Living Labs are being run with much passion and drive. However, many such workplaces have sprung up with a large variation of size and scope. It would be wise to cluster these innovation workplaces better, so as to ensure that the efforts and results can be utilized being and can be developed further.

3.2.3 Strategic agenda higher education

The university of applied sciences policy places knowledge institutions at the heart of society. Not only are they connected to society, they are part of the society as stated by the Strategic Agenda Higher Education⁸. Through sustainable regional and sectoral collaboration enriched learning environments can come to exist.

The Ministry recognizes that the functioning of such partnerships are often reliant on individuals and if sometimes more incidental rather than structural in nature. Additionally, the lack of time and flexibility make it hard to connect with the ways of working of SMEs.

→ Recommendation 3

The new agenda has to be ready at the end of 2019. The goal is to prepare a document that is mainly carried by the field. This offer a chance for the Hanze UAS to put their vision, innovations and strategic principles forward in the consultation proces around the determination of the new agenda.

⁷ Learning communities: Samen ze en we de volgende stap; uitgave van: Topsectoren en Platform Bètatechniek, Den Haag, June 2017

⁸ Strategische Agenda Hoger Onderwijs en Onderzoek 2015-2025, paragraaf 4.1 e.v.

3.2.4 Sector agreement Ministry and Universities of Applied Sciences

Connecting to the strategic agenda, some starting principles are decided upon by the Ministry and Universities of Applied Sciences in the new quality agreements. Among these is the principle of working on societal added value through practise oriented research with impact⁹. Collectively an exploration into the relevant policy questions and priorities for practise oriented research will be started. These will directly influence the new Strategic Agenda for Higher Education. The Association of Universities of Applied Sciences and the Minister of Education, Welfare and Science, will involve the relevant stakeholders in this process.

3.2.5 National Science Agenda

The National Science Agenda was, after wide public consultation, divided into 25 thematic ‘research paths’, varying from more fundamental topics to topics with possible society-wide implementation and perspective. In the next round, the maximum subsidy has also been expanded. Where before the focus was placed upon research universities, now universities of applied sciences are also being stimulated to submit proposals, in partnership with the research universities, industry and social organisations.

→ Recommendation 4

De National Science Agenda offer chances for concrete deepening of knowledge. It would be good to explore the next steps that have to be taken, how a proposal is best layed out and which chances it offers.

3.2.6 Regional Deals

The national government has reserved the so-called ‘regional envelope’ for solutions to regional issues, as long as the commitment is present and governance and own financing can be proved by the region. In the last round in the summer of 2018, the Hanze UAS also presented a proposal with its partners in the Accord of Groningen - however, it was not selected. It was rushed work as the option for submitted a proposal did not become apparent until shortly before the deadline.

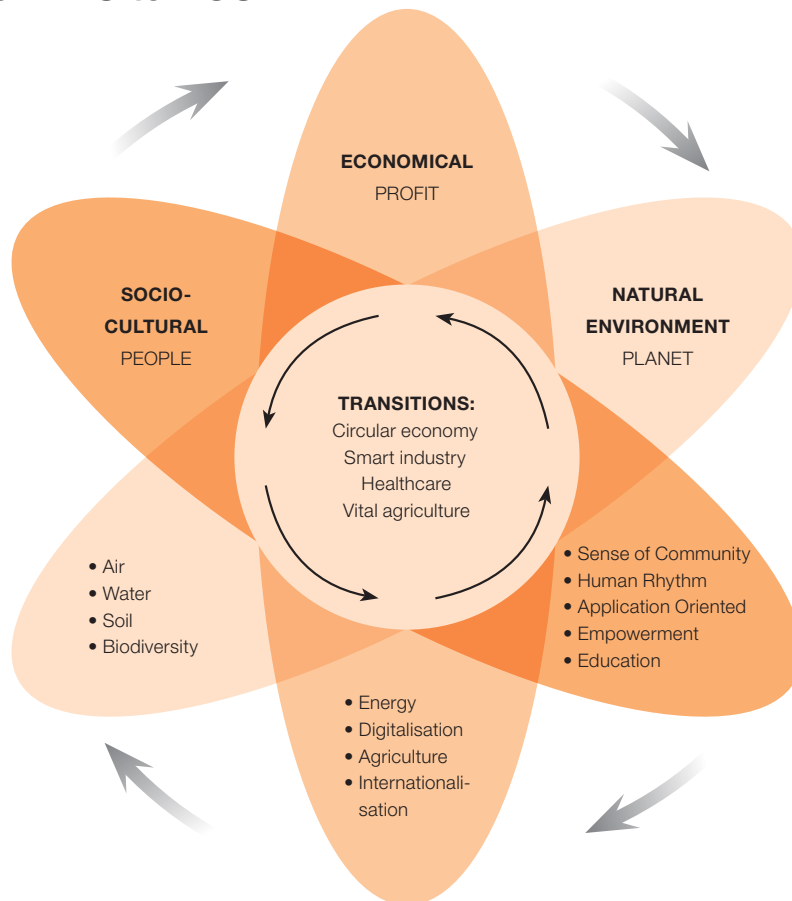
→ Recommendation 5

At this moment it is not yet clear when the third round of allocation of resources from the regional-portfolio will start. It is recommendable to already start to form a strong regional collaborative relationship and to start thinking about a convincing proposal for Cabinet. Emissaires must be sent to The Hague to start to put out feelers and collect insider information. When all signals are positive, start to work on a new proposal and form a lobbying team.

⁹ Vgl. Sectorakkoord hoger beroepsonderwijs 2018, paragraaf 2.

3.3 Northern Netherlands Alliance

3.3.1 From RIS to ROS



Afb.1; Mission-driven innovation in the Northern Netherlands after 2020; SNN, Tijsma 2018

The Northern Netherlands Alliance (SNN) pleads for changing the Regional Innovation Strategy (RIS), to the Regional Development Strategy (ROS), fed by European funds. The ROS would then be providing input for the regional implementation of European funds. SNN wants show that a regional programme development of the European Structure and Investment Funds would function better than the current national programme development.

Because of this, SNN wants to develop a regionally determined guiding agenda that will serve as the foundation for a cohesive implementation of available resources after 2020. They want to connect private and public funding to this in order to achieve breakthroughs on societal issues.

SNN organizes these challenges based on the triple bottom line of sustainability: people, planet and profit. There are challenges attached to each of these pillars, which as called wings of the propeller in image 1. They come together in the transitions: circular economy, smart industry, healthcare, vital agriculture.

However, we are not there yet. In order to achieve this, SNN needs support from the cabinet: a formal commitment for the northern Netherlands' ambitions and initial agreements with cabinet as it pertains to funds, regional execution and distribution.¹⁰

3.3.2 Input from the North of the Netherlands in European Agendas

Through SNN, the Northern Netherlands prepares its priorities with their eye on the new EU agenda starting in 2021. Relevant and active stakeholders are able to voice their opinion at this time.

Input can especially be given through projects in the current agenda of Interreg Europe for the yet to be formulated EU policies. The Hanze UAS already has projects such as TraCS3, E-Cool, InnoHEIs and SHREC that serve as a vehicle for policy advice and renewal.

→ Recommendation 6

The Hanze UAS, through Interreg, has a leading position in a series of projects that can deliver a powerful tool. You can use them to build position and influence. In order to do so these projects need to work together with other running projects from Interreg North Sea and other related projects. It would be useful to make an overview of the initiatives and possible synergies.

3.4 Groningen | Province

3.4.1 National Programme of Groningen (NPG)

With the National Programme of Groningen, the region and the national government together with citizens, social organizations and businesses can shape the future of Groningen. The programme is aimed at economic resilience, quality of living space, the energy transition and sustainability. The programme knows three core values: 1. Future resistant living, 2. Innovations for nature, energy and climate and 3. Regional economy and the labour market.

→ Recommendation 7

For the Hanze UAS, all three priorities as given by the National Programme Groningen (NPG) give the opportunity for a multi-year, structural effort for the organizing of a regional eco-innovation structure. This can be done as a valuable addition to running and new project as well as using programmes to create synergies. Inventorize what you are already doing, how this fits with the NPG and make it into a cohesive agenda (NE(X)TWORK).

¹⁰ See <https://www.snn.nl/over-snn/snn-als-belangenbehartiger/sterk-noord-nederland/thuis-in-europa> en <https://www.snn.nl/sites/default/files/2018-10/Sterk%20Noord-Nederland%20EU%20Fondsen%20na%202020.pdf>

3.4.2 Regional deal Nature-inclusive Agriculture

Subsequently, the province of Groningen - together with the provinces Fryslân and Drenthe, the regional agricultural and nature sector and research community - has struck a deal with the national government for a programme to create nature inclusive agriculture. With this programme, the region and the nation invest in the vitality of the communities that put forth natural capital for a sustainable food supply with a type of agriculture that strengthens biodiversity and the general landscape. This deal will be part of the wider trajectory of the National Programme of Groningen.

→ Recommendation 8

The Hanze UAS has several programmes that can be connected to this (Groningen, research to sustainable business models, etc.)

Manifest yourself as Hanze UAS in this Regional deal and take a piece of the budget for the implementation of region-focussed research and education.

→ Recommendation 9

With the innovation workplace in Helpman (neighborhood in the city of Groningen) 'De Wijert en Wijs', the Hanze UAS has a strong partnership that can be intensified in the next school year. This can be done with the neighborhood council and a new council of education.

3.5 Groningen | City

3.5.1 Study Programme

Knowledge, innovation and entrepreneurship are also going to be important pillars in the coming academic period for the city's economy. Groningen wants to develop itself as an international innovation, knowledge and education city. There is also a plan in the works that will show the possibilities for a circular economy. In the coming academic period strengthening of the partnership with neighbourhoods, areas and villages will also be worked on. A combination of a more healthy and green living environment, as well as support in terms of income, work and healthcare, is being put forth to increase overall prosperity. Together with citizens, knowledge institutions, social organisations, the business community and corporations, concrete improvements in quality of life and prosperity should be achieved.

3.5.2 Agreement of Groningen

In the Agreement of Groningen, the Hanze UAS, the University of Groningen (RUG), the University Medical Centre Groningen (UMCG) and the city of Groningen work together to promote and market Groningen as a knowledge hotspot. In November 2018, the partnership was renewed under the motto of 'Scale Up and Connect'. For the period until 2022, agreements have been made surround three strategic themes: healthy ageing, energy and digital society. This is supported by some preconditional themes for the binding of talent and creating a lively innovation climate as well as taking care of youth-housing and attracting international students and researchers. A roadmap has been determined for every theme, including an approach as well as qualitative and quantitative goals that the partners want to reach together. These goals are supplemented with a marketing and communication task.

3.5.3 Northern Knowledge

Northern Knowledge is an initiative of the RUG, UMCG and the Hanze UAS. On the campus, they combine their knowledge with that of businesses, governments and social organisations, and in doing so they offer a look at the innovation and entrepreneurship around the theme's: healthy ageing, digital society, agrifood, energy transition and bio-based economy. Northern Knowledge is aimed at innovative entrepreneurs, stimulating entrepreneurial behaviour and stimulating the collaboration between knowledge institutions and innovative businesses. It functions as a way to transfer knowledge and valorisation programme of the three partners.

3.5.4 Global Centre of Excellence on Climate Adaptation

Groningen's part of the UN-climateinstitute is located in the Energy Academy Europe, the foremost centre of knowledge of the energy transition in the North of the Netherlands. With the BREEAM¹¹ standard level of 'Outstanding' it is the ideal location for this centre of expertise which connects a world wide network of partners.

By bringing knowledge about projects about e.g. infrastructure and agriculture together, we can increase resilience to climate change of roads, buildings and farmland in vulnerable countries. As an overarching theme, climate adaptation is connected to technological and social innovations and manages to connect many different sectors.

→ Recommendation 10

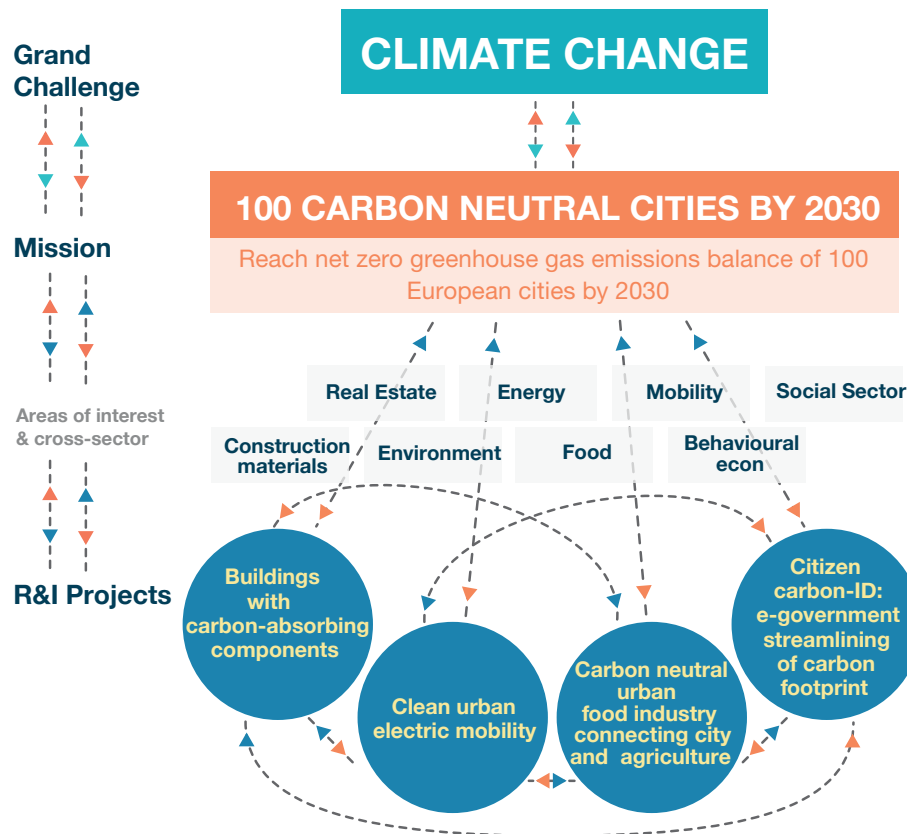
The Hanze UAS is a strong player in terms of innovation, bio based economy, energy, etc. The knowledge about these domains is spread across many innovation workplaces and professorships. Their power and impact could be improved by better clustering of the separate projects to a programme level, from programmes to hubs and eventually to a cohesive system. Make a bid book, hand it to the Minister of Economy Affairs and Climate. Possibly integrate the bid book into a bid book for the National Programme for Groningen or for a new Regional Deal and also offer them to the relevant parties.

¹¹ Building Research Establishment Environmental Assessment Method.

4. The Task of Research and Education

4.1 Mission Driven Innovation

At a meeting regarding the European and national policy of the former paragraphs, the mission-driven approach has been up to par. The missions are meant to drive and guide innovation. This does mean a change of course in relation to how the innovation policies have been shaped in the past. In the classical approach to innovation policy, the assumption has always been that businesses will invest in order to gain knowledge which is offered through Universities of Applied Sciences and research universities. This was very much based on the 'supply' the universities could offer - not on the demand. With a new focus on the mission-oriented innovations, the intention is to turn this around. Decisions will be made based on the needs of society at large and the big challenges and questions it faces. This crucial change should strengthen our competitive position as well as stimulating economic growth.



M.Mazzucato, climate change

Mazzucato¹² uses an example to illustrate that smart choices in regards to challenges combined with ambitious and realistic goals lead to transdisciplinary, cross-sectoral and multi-actor innovations and solutions. The difficulty lies in formulating the missions appropriately: “**ambitious, engaging and achievable**,” says Mazzucato. This can only be achieved with an integrated policy as a starting point.

In the Dutch innovation policy, there are **4 societal themes** which are central: **agriculture, water & food, health & care, energy transition & sustainability** - added to this is **safety**. If you want to translate these missions into innovations successfully then you have to implement radical measures to ensure the sustainability of the sectors of: chemistry, water, agrofood and construction - largely by working on circular systems, inclusive business models and new forms of financing.¹³

4.2 From Triple Helix to Quadruple Helix

In order to successfully create regional innovation strategies, the transition from the triple helix (TH) to the quadruple helix (QH) is needed. The participation of actors from the societal middle field is crucial, as those will be the end-users of the new products, services and processes.

The QH is a development stemming from the triple helix. The TH represents the market, knowledge institutions and government. There is no true consensus as to who the fourth player in the QH is. Some would like to call it the ‘citizen’. We, however, follow the definition of Elias G. Carayannis, who worked on innovation economics by following in Schumpeter’s footsteps. Carayannis introduced the initial framework for the quadruple - and even quintuple - helix¹⁴ With this, he made clear that innovation is not a success until it has been implemented in society. With ‘quadruple’ he emphasizes the ‘civil society’, the societal middle field, as the party that carries on the discourse around the innovation question or need. With ‘quintuple’ he is highlighting the sustainability aspects that need to be brought forward by the innovation processes. For the societal middle field, we follow the definition given by the World Bank: “It consists of a broad acreage of non-government and non-profit organisations that are active in public life. They represent the interests and needs of the individual members or others and base this on ethical, cultural, political, scientific, religious or philanthropic considerations.”

The transition to the QH collaboration can be seen as a synthesis of top-down policy and practise between the TH actors with bottom-up initiatives from the civil society.

Without the active participation of the end-user, innovation will remain offer driven.

12 Mazzucato, M., (2008). Mission-Oriented Research & Innovation in the European Union; A problem-solving approach to fuel innovation-led growth; Brussel: European Commission, Directorate-General for Research and Innovation.

13 Grin J., (2018). Missiegedreven beleid en wat we in 2019 zo graag hadden willen begrijpen’, p. 132-135 in: Arjen Lantheer, Frans van der Zee en Marcel de Heide (2018). De Staat van Nederland Innovatieland, editie 2018: Missies en ‘nieuw’ missie-gedreven beleid. Den Haag: TNO Afdeling Strategie en Beleid.

14 Carayannis, Elias G.; Campbell, David F.J. (2010). “Triple Helix, Quadruple Helix and Quintuple Helix and How Do Knowledge, Innovation and the Environment Relate To Each Other?: A Proposed Framework for a Trans-disciplinary Analysis of Sustainable Development and Social Ecology”. International Journal of Social Ecology and Sustainable Development. 1 (1): 41-69.

Add to that, the fact that the consumer is changing into a *prosumer* in many ways. Traditional TH-partners will have to leave their customary positions. All four parties will have to contribute their own tools and knowledge and work as equals.

Can a QH- collaboration also contribute to the development of the RIS3? Different sources, among which Carayannis and Grigoroudis¹⁵ say it can, even is a QH-approach of RIS3 requires more effort according to their analysis.

→ **Recommendation 11**

With the infrastructure of the innovation workplace 'Powerful SMEs', the Hanze UAS has already laid the foundations for the cooperation needed for the QH. But more attention needs to be given to the 'Entrepreneurial Discovery Process'. How can you ensure stakeholders from industry, academics, society at large and policy makers identify and execute opportunities? How do you integrate the fragmented knowledge widely available. How do you build connections and partnerships. How do you valorise them and bring them to market? A similar proces was started with NE(X)TWORKX. But its keeps failing. How do you make clear what it is essentially about?

4.3 Learning and Innovating Economy / Responsiveness

In 2013 the Netherlands Scientific Council for Government Policy (WRR) published its advice 'To A Learning Economy'. This advice was about research in the interest of the region on its way to a new successful innovation-ecosystem. The Board pleaded for a new vision on innovation. No momentary activity from prominent inventors, but a permanent learning process of those involved. How can the Netherlands best make use of these new circumstances according to the WRR?

1. By making governments, social organisations and entrepreneurs fit to tackle the new challenges. In order to do so, a transition is needed. This includes a new policy regarding social and economic reform, innovation, education, entrepreneurship and spatial development to a new area where all of the above can come together to be developed and implemented.
2. Dissolving the divide between learning and working phases of life, working and learning can be better connected. According to the council: "work towards a learning economy in a learning region through learning networks and lifelong learning and development".
3. This will also be a new challenge for research and education. Regionals partners are not primarily waiting to apply knowledge created in a laboratory. This will mean a great need for connecting expertise with the need of society (including industry) and to catalyse alliances. In short: do not come out introducing a professor who has come up with a new concept, instead, become a professional guide which can think along proactively and long term about processes, products and services and how they can be continuously developed. Knowledge does need to be available, however preferably in the widest way and in a way that makes it possible to continuously make incremental chances and where necessary develop disruptive innovations.

15 Carayannis E., Grigoroudis E. (2016) Quadruple Innovation Helix and Smart Specialization: Knowledge Production and National Competitiveness. Foresight and STI Governance, vol. 10, no 1, pp. 31–42.

4.4 Reciprocity or Increasing Dependency?

The Social and Economic Council (SER) already stated in their 2015 advise about the Strategic Higher Education Agenda, that in order to have sustainable cooperation between education, industry, governments and social organisation a foundation of shared needs, goals and reciprocity is required. This reciprocity is not only to be found in the threefold of benefits for knowledge institutions, government and the market but also in the way of thinking 'not only from inside outward' as in from inside the schools to the outside partners. It must also be the other way around 'letting the outside partners in'.¹⁶.

However, the balance of this triangle is not as simple as it may appear. Knowledge institutions are reliant on an exterior network. This was also found by the European University Association (EUA). The EUA says that the role of those knowledge institutions is changing fast.¹⁷. By a partnership with industry and government, and also stronger financial pressure, the innovation strength could be undermined, for as far as innovations that do not directly lead to marketable results.

You could state that the Hanze UAS, with her focus of applied research, is not as strongly affected. However, this is not true. Because at stages of research such as 'proof of concept', prototyping and initial marketing steps, one can be impacted by the effects of the market.

16 SER (2015). Leren in het hoger onderwijs van de toekomst Leren in het hoger onderwijs van de toekomst: Advies over de Strategische Agenda Hoger Onderwijs 2015 - 2025

17 The Role of Universities in Regional Innovation Ecosystems. Te downloaden op <https://eua.eu/component/attachments/attachments.html?id=2032>

4.5 Lifelong Learning

The concept 'Life Long Learning' - the conscious and systematic development throughout your whole life - has been a topic of discussion for half a century. It gained Europe wide attention and meaning when the European Union declared 1996 the year of Life Long Learning.¹⁸

4.5.1 What does LLL mean?

In order to emphasize that informal learning is equally important as formal and non-formal learning, the term 'LifeLong Learning' was added to the Dutch policy in 2018.¹⁹ Both definitions have been used alongside each other, however, the 'LifeLong Learning' (LLL) which indicated the life long formal, non-formal and informal learning was the concept that ultimately prevailed.²⁰

- Formal Learning: learning activities such as studies that may lead to an officially accredited diploma, usually lasting 6 months or longer.
- Non Formal Learning: courses, training, industry-specific courses that are offered by private institutions, usually lasting shorter than 6 months.
- Informal Learning: intentional learning activities that take place in daily practice.

4.5.2 What does the Cabinet want?

In the government agreement Rutte III, it is stated that everyone can continue to develop themselves after graduation. In September of 2018, the minister of Social Affairs & Employment (SZW) and Education, Culture & Science, shared their vision and ambition regarding LLL with the House of Representatives. The Cabinet wants a breakthrough in the area of LLL and to create a strong learning culture. Central to this approach is stimulating the choices people have and make in regards to their career and life so that they are enabled to continue to develop and make their own choices. LLL keeps people vital, flexible and sustainably deployable in the workfield. It is possible that people get stuck in their careers or lose their jobs. LLL contributes to a flexible labour market. The Cabinet wants to move from 'repairing' to 'looking to the future'. Education is not something that should loom when you lose your job, it should be an obvious part of life and work²¹. This is why the Cabinet will make an individual learning account available to all Dutch citizens "connected to the labour market"²²: the so-called STAP budget (step budget).²³, this offers between €1000 and €2000 per applicant. Per year €200.000 is available.

18 "Objective: To make the European public aware of the importance of lifelong learning, to foster better cooperation between education and training structures and the business community, particularly small and medium-sized enterprises (...)." <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:c11024&from=NL>

19 Zie o.a. <https://levenlangontwikkelen.nl/nieuws/bestuursakkoord-mbo-2018-2022-trots-vertrouwen-en-lef/>, geraadpleegd op 31-05-2019

20 Pleijers, A. (2018). Een leven lang leren in Nederland. In: Tijdschrift voor Arbeidsvraagstukken, jg. 34, nr. 3, p. 390-399

21 Leven Lang Leren, brief van de ministers van Sociale Zaken en Werkgelegenheid en van Onderwijs, Cultuur en Wetenschap, 27 september 2018. Tweede Kamer, vergaderjaar 2018/2019, kamerstuk 30012-92.

22 Er is bijvoorbeeld sprake van een 'band' wanneer iemand verzekerd is voor de volksverzekeringen en/of belastingplichtig is. De precieze definitie moet nog worden uitgewerkt om in de regeling te worden opgenomen. De publicatie van de regeling is aangekondigd voor rond de zomer 2019. Zie: Kamerbrief 03-06-2019, Voortgang individuele leerbudgetten en enkele onderwerpen rond flexibilisering aanbod, ministers Koolmees en Van Engelshoven

23 STAP: STimulans ArbeidsmarktPositie

Alongside this, the ministers will work to make the supply side of education more fitting to this new learning culture. Think of: flexible education for adults on all fronts. In vocational and private sector, progress is being made to make the options more fitting to the needs of adults. Experiments have been done with 'demand financing', where the government gave out vouchers that could be used for modules within a study so that the tuition fee became lower. Next to this, an individual digital portal is being created on which all the options regarding educational option and the rules and budgets thereof are made clear.²⁴.

→ Recommendation 12

It is believed that by the end of 2019 it will become clear when the STAP-rule, it will likely be after January 1st 2020. It can be spent on a certificate, course or career coaching. You will be applying online. The requisite monetary amount will, after approval (of the UWV), be paid out directly to the institution of learning.

Here lays a chance for the Hanze UAS. Develop (re)training options together with your partners in the region (Regional Cooperative and Living Labs) and promote them within your network. In theory everyone can apply, unless they are already taking advantage of other subsidies or study financing. It is important that such education would contribute to the chances someone will have on the labour market.

4.5.3 How do people learn?

The worries about (insufficient) competencies of working individuals due to increasing globalisations, artificial intelligence and other technological development are more relevant today than they ever were. At the same time, research shows²⁵ that participation in studies, courses and training have hardly increased in recent years - even with the many efforts to promote lifelong learning. According to the The Netherlands Institute for Social Research (SCP)²⁶ the participation in non-formal education is clearly larger than that of formal education. And while it is difficult to get reliable data about informal education of adults, the same research shows that informal learning is actually most prevalent. Around 93% of Dutch adults indicate that they learn new things at work and in daily life by simply - doing. The Social Economic Council of the Northern Netherlands considers this in their advice²⁷ For the new five year mandate for the European Commission and European Parliament. The Council pleads for more 'workplace learning' ²⁸ and for maintaining a quality standard of 'workplace learning' on a European level. Another point is raised. Demographic changes make it so that there are less young people available on the labour market, even while the demand for a higher level of knowledge and skills is growing. It turns out those people who do actually partake in learning activities are the older and lower educated individuals.²⁹.

24 Vraaggesprek met Minister Ingrid van Engelshoven (OCW) over een Leven Lang Ontwikkelen; <https://www.ser.nl/nl/publicaties/leven-lang-ontwikkelen>; geraadpleegd op 24-07-2019

25 Grenzen aan een leven lang leren, Ralf Maslowski (m.m.v. Ria Vogels), Sociaal en Cultureel Planbureau Den Haag, mei 2019

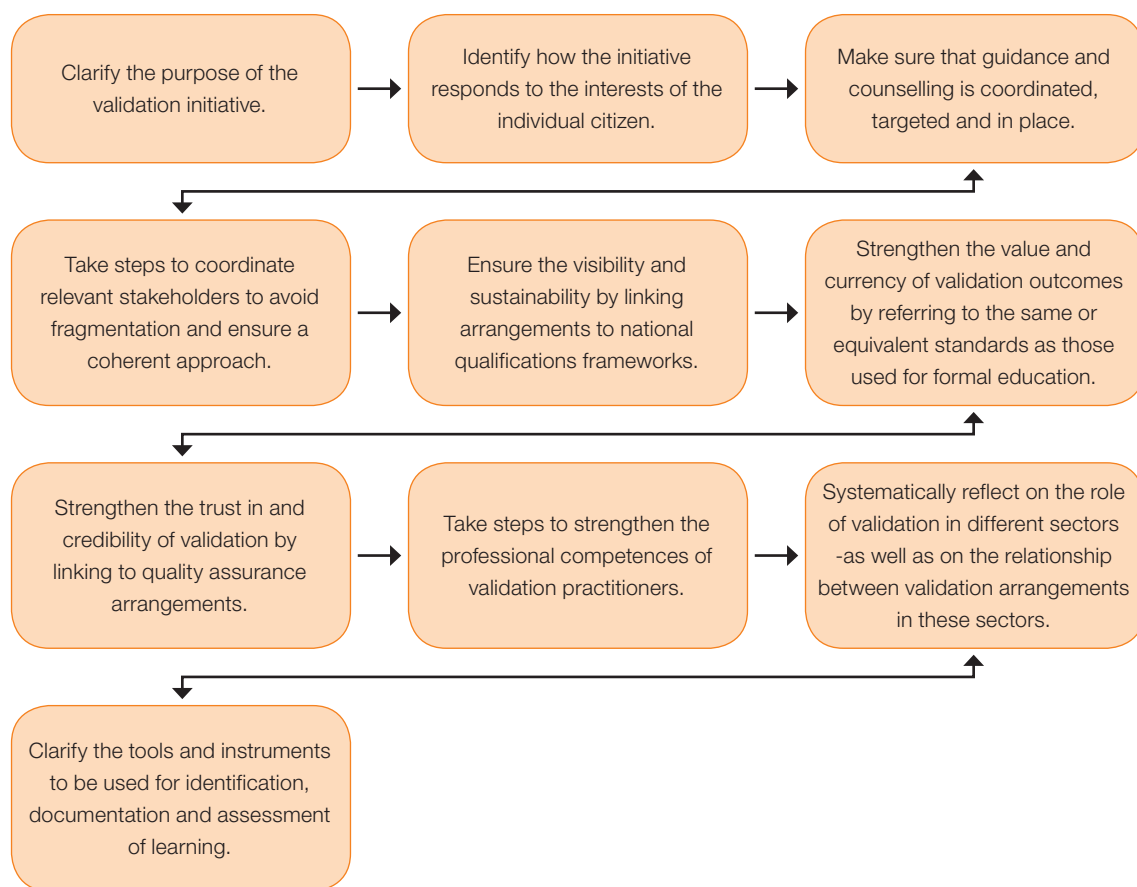
26 Ibid.

27 SER geeft leven lang ontwikkelen prioriteit bij EU; <https://www.scienceguide.nl/2019/04/ser-geeft-leven-lang-ontwikkelen-prioriteit-bij-eu/>; geraadpleegd op 22-04-2019

28 Zoals gedefinieerd door Onstenk, J. (2011). Ontwikkelen van bekwaamheden tijdens het werk. In J. Kessels & R. Poell (red.), Handboek Human Resource Development. Organiseren van het Leren. (248-263) Houten: Bohn Stafleu van Loghem: 'leren dat plaatsvindt in reële arbeidssituaties als leeromgeving en met werkelijke problemen uit de arbeidspraktijk als leerobject'.

29 Kosse, D. (2018). Duurzaam inzetbaar blijven door continue ontwikkelen. Open Universiteit Nederland

Because the importance of learning is more readily accepted, it is being explored whether it would be possible to also certify informal learning. Possibly by the European Centre for the Development of Vocational Training (CEDEFOP). In 2015 CEDEFOP established guidelines whereby informal learning can be validated.³⁰ They say that in order to do so, you need to make clear and visible what the results of the informal learning process are and attach fitting values to this. In a 10 step plan of action, they explain how you can set a clear goal to work towards and which tools can serve as an end assessment for the informal process. With the Living Labs of the Hanze UAS, it has developed an innovative, flexible and responsive working environment in which on the job learning happens mostly in an informal way.



CEDEFOP: 10 steps plan for validating informal learning

30 Cedefop (2015). European Guidelines for Validating Non-Formal and Informal Learning. Luxembourg: Publications Office.

4.6 EU research Higher Education for Smart Specialisation

HESS stands for 'Higher Education for Smart Specialisation'. The Joint Research Centre (JRC), the science and research centre of the European Commission, started researching the role that knowledge institutions can have in the design and implementation of regional smart specialisation strategies (S3) in march 2016.

→ Recommendation 13

It would be interesting to see to what extent the 10-step approach can be developed into a way of certifying the learning in Living Labs. It could prove to be an interesting business case since the amount of initial students is reducing. Also see what the options are for a partnership to put forth a proposal within the ERASMUS+ or Comenius.

It showed that knowledge institutions are one of the few that can perform this task as they represent the three elements of the 'Knowledge Triangle' (research, education and innovation). Due to this unique position, they play a key role as it pertains to developing innovation capacities. It is therefore of imminent important to increase the representation of knowledge institutions in regional partnerships and to integrate research, innovation and regional development in the S3-policy with them.

→ Recommendation 14

It is important for the Entrepreneurial Discovery Process (EDP) (see last recommendation) the right people are found within the Universities of Applied Sciences. Students should also be involved. It is a transdisciplinary proces, where a high level of capacity building will also be required. Within the entire UAS, a shared concept of the process, policy and the individual and institutional role in it needs to be developed.

In doing so, their (potential) role in the region is much more relevant than is ordinarily thought. One of the most important recommendations of the JRC is therefore to involve Universities of Applied Sciences in the regional and interregional *entrepreneurial discovery process* (EDP). EDP is a concept that came forth from the smart specialisations. It stands for the cooperative approach of regional players in the process of entrepreneurship, new discoveries and translating them into investments.

Sustainable Development Goals

Higher education is crucial for reaching the Sustainable Development Goals (SDG). The European Union underlines the importance of education, research and innovation for the success of the SDG. The European Commission has created a 'reflection paper' in which they explain how the SDG can be best achieved.³¹ According to the European Commission, research and innovation play an important role in attaining the goals. Especially for SMEs, as they don't usually have the finances to execute their own research, the connection with Universities of Applied Sciences is important.

Looking at financing options in a smart way

The question remains of how best to finance this. The JRC advises to properly analyse Universities of Applied Sciences and how they relate to the regional S3-goals and priorities. Create an overview of the current education and research related financial landscape and place the priorities of the S3 in it. Repeat this regularly and make sure that all the schools and institutions of learning combine their power.

31 Reflection Paper towards a Sustainable Europe by 2030. European Commission, 30 January 2019, Bruxelles/Brussels

5. The current situation at Hanze UAS

What has the Hanze UAS accomplished? We give an overview of the professorships, the Living Labs and the amount of subsidized projects.

5.1 Professorships

Distribution based on Pillars

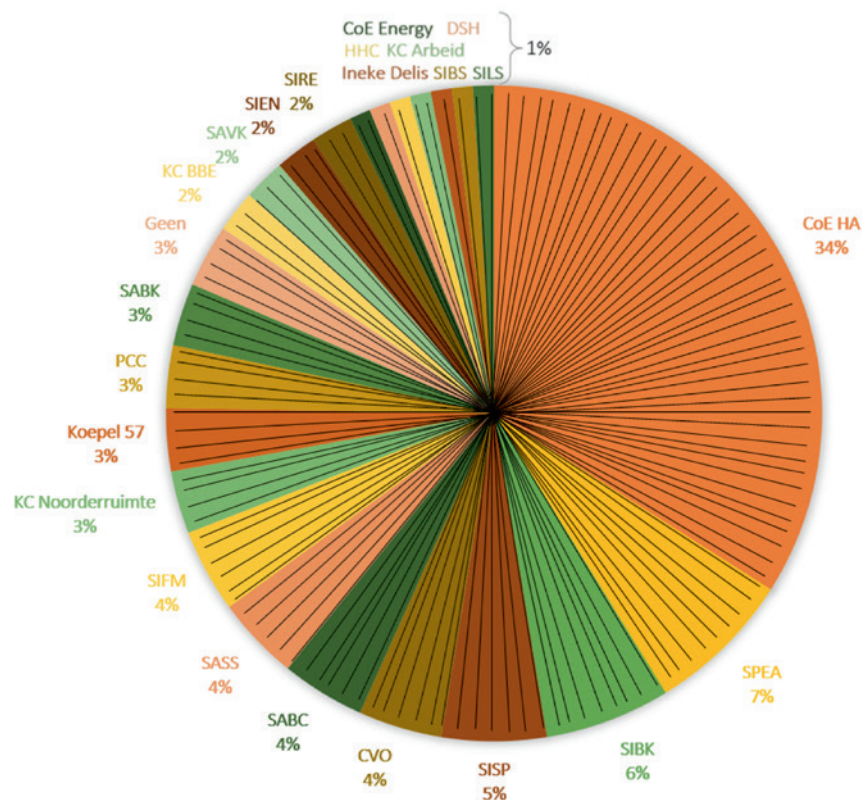
This overview is based on information from the website of the Hanze UAS where the professorships in the research category were filtered on the three pillars 'energy', 'healthy ageing' and 'entrepreneurship'. Some overlap, showing there is room for collaboration.



5.2 Living Labs

From the overview, a large amount of Living Labs is apparent. As great as this is, it also makes it more difficult to remain an overview of the knowledge being transferred and combined relevance of the Living Labs. Due to the large amounts of Living Labs, there is hardly any ongoing and learning processes and the scaling up thereof in the Living Labs. This quandary requires an analysis of the current state of affairs, the link between the centres of knowledge, their management and the clustering options.

5.2.1 Total Amount of Living Labs: 98



5.2.2 Budget and Validation per Living Lab

→ Recommendation 15

There is a large diversity of Living Labs requires an analysis into the current state of affairs, the link between research centres, content and proces wise management and better clustering.

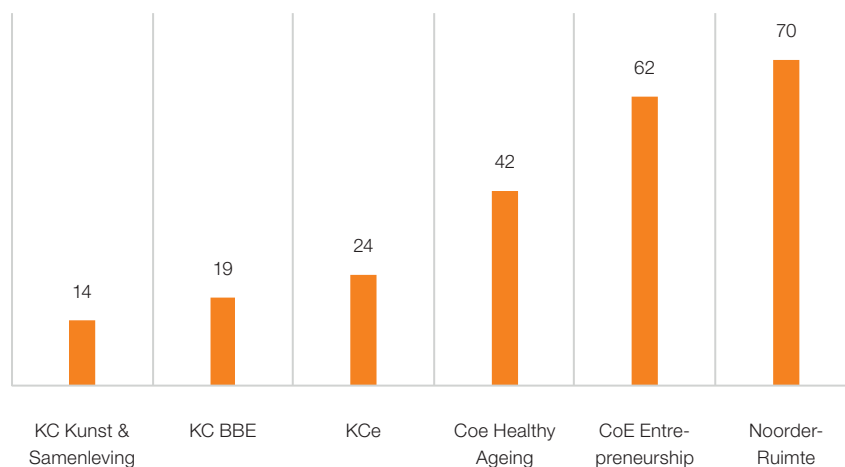
5.3 Subsidised Projects

The data is taken from PURE (11-03-2019). The first overview shows the centres of knowledge that are actively preparing and submitted proposals and finding other means of funding. The following diagrams show requested and granted subsidies per knowledge institution. From the PURE data, it is not clear how many hours were spent on the proposals.

The diagrammes thereafter show the amount of project of which the Hanze UAS is the lead partner. Besides the state financed projects projects, this rarely occurs. Being lead partner comes with a lot of administrative costs. However, as lead, you also have a lot of power when it comes to the direction of the project and you are also the face of it.

From the data it is not clear whether the decision of whether to be lead partner was made for strategic reasons. We show the diagrams to show the relationships between accepted and denied proposals, the size of the requested subsidy and the lead partnership.

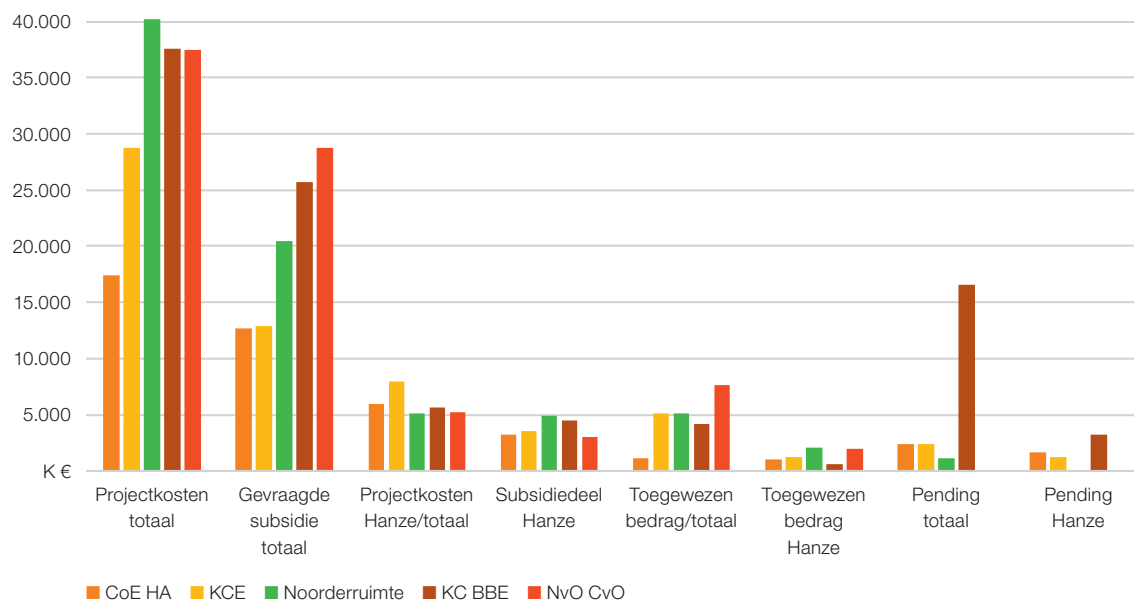
Total applications per research centre



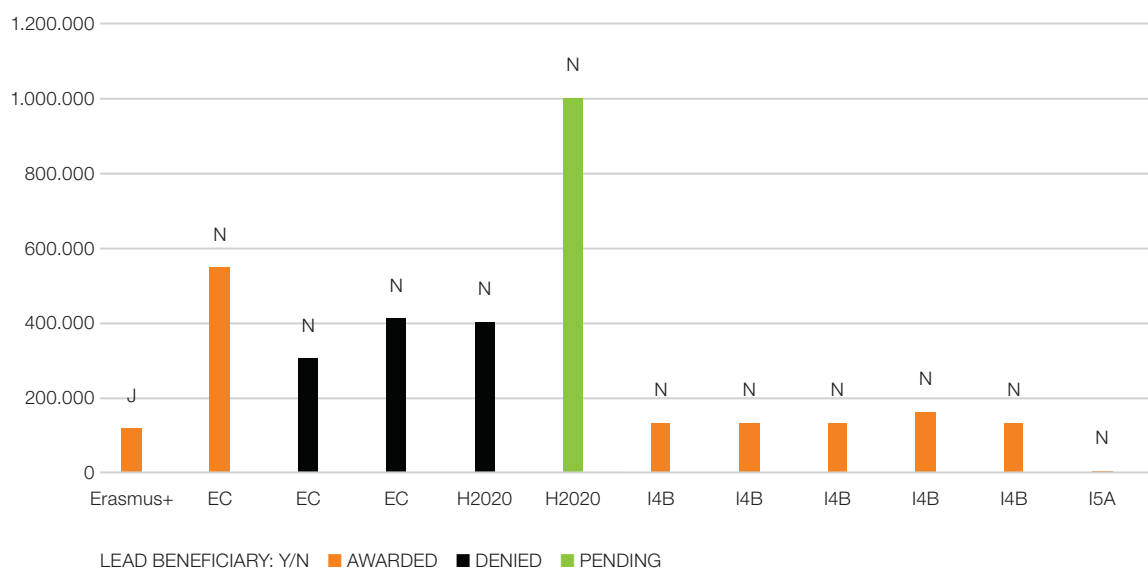
→ Recommendation 16

The (financial) data in PURE is not always reliable. Some data is missing, some is not filled out correctly (higher subsidy than there are costs, etc.) and some information is missing completely. This makes it hard to create a complete overview. Due to the missing and incorrect information, an exact amount of proposed projects can not be given. The question of whether the Hanze UAS is the lead partner in the proposals can also not be answered due to the lacking data. It is impossible to say, based on PURE, how many hours were spent on preparing the proposals. A true calculation about the costs and income of these proposals can not be made. For a correct overview, it would be useful to correct the information in PURE. It would be desirable if management regularly assessed the document and checked whether it was correct.

Applied for and awarded subsidies per knowledge centre

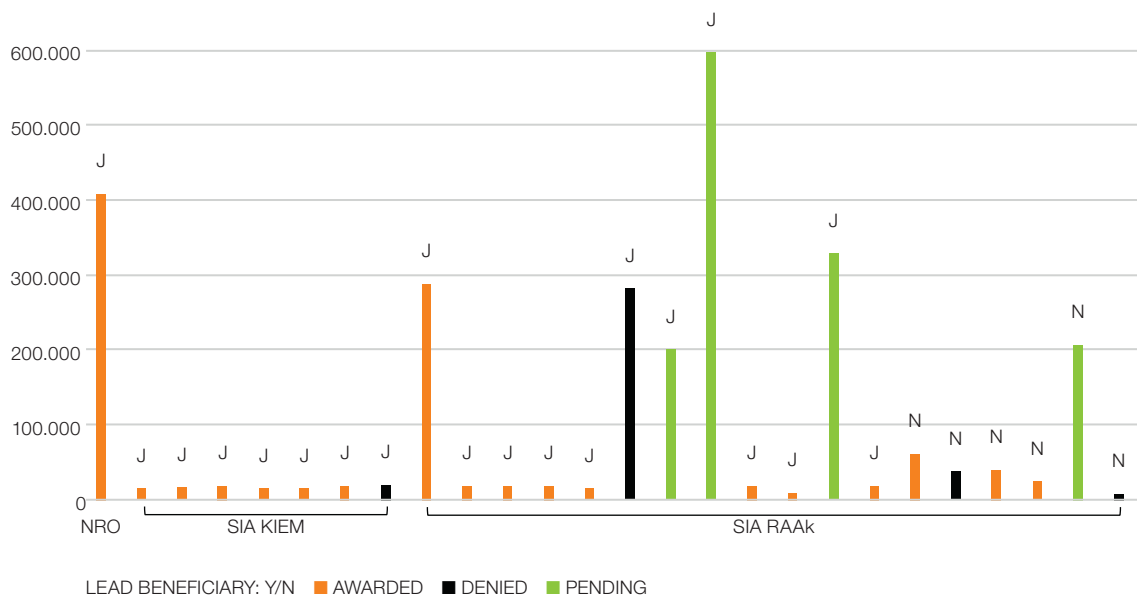


Lead partnership and subsidy portion Hanze UAS



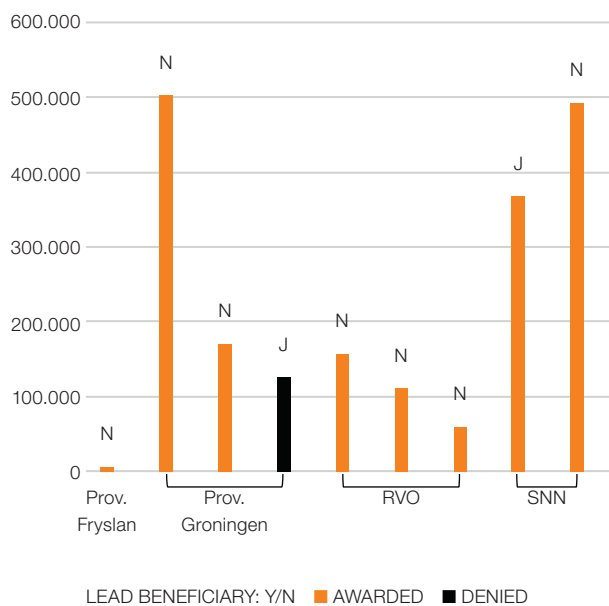
A. In European programming

Lead partnership and subsidy portion Hanze UAS



B. In national programming

Lead partnership and subsidy portion Hanze UAS



C. In regional programming

6.2 Recommendations

Alongside the previous paragraphs recommendations were made.

1. **ERASMUS+** | Through Erasmus+, HEI's will get the strategic opportunity for better collaboration with their partners in the QH. In light of this, it is peculiar that the Hanze UAS, with its meaningful position in the region, was only lead partner on one ERASMUS-project (Move Healthy, E+Sport). The Hanze UAS should make more use of the current and upcoming ERASMUS-programme, and specifically and strategically aim at synergies with other projects and programmes.
2. **Living Labs in the Region** | The Hanze UAS has developed a special kind of learning communities with its Living Labs. At the same time, it improves the workspace learning in both the initial and postinitial education. The Living Labs are being run with much passion and drive. However, many such workplaces have sprung up with a large variation of size and scope. It would be wise to cluster these innovation workplaces better, so as to ensure that the efforts and results can be utilized being and can be developed further.
3. **Strategic Agenda for Higher Education** | The new agenda has to be ready at the end of 2019. The goal is to prepare a document that is mainly carried by the field. This offer a chance for the Hanze UAS to put their vision, innovations and strategic principles forward in the consultation proces around the determination of the new agenda..
4. **National Science Agenda** | De National Science Agenda offer chances for concrete deepening of knowledge. It would be good to explore the next steps that have to be taken, how a proposal is best layed out and which chances it offers.
5. **Regional Deal** | At this moment it is not yet clear when the third round of allocation of resources from the regional-portfolio will start. It is recommendable to already start to form a strong regional collaborative relationship and to start thinking about a convincing proposal for Cabinet. Emissaires must be sent to The Hague to start to put out feelers and collect insider information. When all signals are positive, start to work on a new proposal and form a lobbying-team.
6. **Preparation for New European Programmes** | The Hanze UAS, through Interreg Europe, has a leading position in a series of projects that can deliver a powerful tool. You can use them to build position and influence. In order to do so these projects need to work together with other running projects from Interreg North Sea and other related projects. It would be useful to make an overview of the initiatives and possible synergies.
7. **National Programme of Groningen** | For the Hanze UAS, all three priorities as given by the National Programme Groningen (NPG) give the opportunity for a multi-year, structural effort for the organizing of a regional eco-innovation structure. This can be done as a valuable addition to running and new projects as well as using programmes to create synergies. Inventorize what you are already doing, how this fits with the NPG and make it into a cohesive agenda (NE(X)TWORX).
8. **Regional Deal Nature Inclusive Agriculture** | The Hanze UAS has several programmes that can be connected to this (Groningen, research to sustainable business models, etc.) Manifest yourself as Hanze UAS in this Regional deal and take a piece of the budget for the implementation of region-focussed research and education.
9. **College Programme** | With the Living Lab in Helpman (neighbourhood in the city of Groningen) 'De Wijert en Wijs', the Hanze UAS has a strong partnership that can be intensified in the next school year. This can be done with the neighborhood council and a new council of education.

10. **Clustering to a Cohesive Climate Programme** | The Hanze UAS is a strong player in terms of innovation, bio based economy, energy, etc. The knowledge about these domains is spread across many innovation workplaces and professorships. Their power and impact could be improved by better clustering of the separate projects to a programme level, from programmes to hubs and eventually to a cohesive system. Make a bid book, hand it to the Minister of Economy Affairs and Climate. Possibly integrate the bid book into a bid book for the National Programme for Groningen or for a new Regional Deal and also offer them to the relevant parties.
11. **From Triple to Quadruple Helix** | With the infrastructure of the innovation workplace 'Powerful SME', the Hanze UAS has already laid the foundations for the cooperation needed for the QH. But more attention needs to be given to the 'Entrepreneurial Discovery Process'. How can you ensure stakeholders from industry, academics, society at large and policy makers identify and execute opportunities? How do you integrate the fragmented knowledge widely available. How do you build connections and partnerships. How do you valorise them and bring them to market? A similar process was started with NE(X)TWORK. But it keeps failing. How do you make clear what it is essentially about?
12. **Extra Financing for Life Long Learning** | It is believed that by the end of 2019 it will become clear when the STAP-rule, it will likely be after January 1st 2020. It can be spent on a certificate, course or career coaching. You will be applying online. The requisite monetary amount will, after approval (of the UWV), be paid out directly to the institution of learning. Here lays a chance for the Hanze UAS. Develop (re)training options together with your partners in the region (Regional Cooperative and IWP's) and promote them within your network. In theory everyone can apply, unless they are already taking advantage of other subsidies or study financing. It is important that such education would contribute to the chances someone will have on the labour market.
13. **Lifelong Learning Certificate** | It would be interesting to see to what extent the 10-step approach can be developed into a way of certifying the learning in innovation workplaces. It could prove to be an interesting business case since the amount of initial students is reducing. Also see what the options are for a partnership to put forth a proposal within the ERASMUS+ or Comenius.
14. **Entrepreneurial Discovery Process** | It is important for the EDP (see last recommendation) the right people are found within the Universities of Applied Sciences. Students should also be involved. It is a transdisciplinary process, where a high level of capacity building will also be required. Within the entire UAS, a shared concept of the process, policy and the individual and institutional role in it needs to be developed.
15. **Integral Innovation System** | There is a large diversity of IWP's requires an analysis into the current state of affairs, the link between knowledge centres, content and process wise management and better clustering.
16. **Making PURE a Reliable Data Source** | The (financial) data in PURE is not always reliable. Some data is missing, some is not filled out correctly (higher subsidy than there are costs, etc.) and some information is missing completely. This makes it hard to create a complete overview. Due to the missing and incorrect information, an exact amount of proposed projects can not be given. The question of whether the Hanze UAS is the lead partner in the proposals can also not be answered due to the lack of data. It is impossible to say, based on PURE, how many hours were spent on preparing the proposals. A true calculation about the costs and income of these proposals can not be made. For a correct overview, it would be useful to correct the information in PURE. It would be desirable if management regularly assessed the document and checked whether it was correct.

